

Amendments to the Claims:

Please amend claims 17, 26, 27, and 28. Following is a complete listing of the claims pending in the application, as amended:

1–16. (Cancelled)

17. (Currently Amended) An apparatus for processing a microelectronic workpiece in a process chamber configured to contain a process fluid, the process chamber having an electrode support configured to support an electrode at a first position within the process chamber, the process chamber further having a microelectronic workpiece support configured to support a microelectronic workpiece at a second position spaced apart from the first position, the apparatus comprising:

a diffusion plate member configured to be positioned between the first position and the second position, the diffusion plate member having a first surface facing toward the first position, a second surface facing toward the second position, and a plurality of openings extending through the diffusion plate member from the first surface to the second surface, the openings being arranged in at least one spiral pattern, wherein the apparatus is configured for relative rotational motion between at least one of the diffusion plate member and the microelectronic workpiece support being rotatable relative to the other.

18. (Previously Presented) The apparatus of claim 17 wherein the plurality of openings includes a plurality of elongated curved slots spaced apart from each other along a spiral path.

19. (Previously Presented) The apparatus of claim 17 wherein the plurality of openings are aligned along a single spiral path extending radially and circumferentially from a central portion of the diffusion plate member toward an outer portion of the diffusion plate member.

20. (Previously Presented) The apparatus of claim 17, further comprising a diffusion plate support configured to support the diffusion plate member in the process chamber, and wherein the diffusion plate support has a plurality of mounting locations, each configured to support the diffusion plate member at a different position between the first position and the second position.

21. (Previously Presented) The apparatus of claim 17 wherein the diffusion plate member has an edge surface between the first surface and the second surface, and wherein the apparatus further comprises a diffusion plate support configured to support the diffusion plate member in the process chamber, and wherein the diffusion plate support has a plurality of grooves with each groove configured to support the diffusion plate member at a different position between the first position and the second position.

22. (Previously Presented) The apparatus of claim 17 wherein the diffusion plate member has generally circular first and second surfaces, and an edge surface between the first surface and the second surface, the edge surface being rounded convexly outwardly away from the first and second surfaces, and wherein the apparatus further comprises a diffusion plate support configured to support the diffusion plate member in the process chamber, and further wherein the diffusion plate support has a plurality of grooves with each groove being rounded concavely to receive and support the diffusion plate member at a different position between the first position and the second position.

23. (Previously Presented) The apparatus of claim 17, further comprising a diffusion plate support configured to support the diffusion plate member in the process chamber, and wherein the diffusion plate support has a first rim portion extending upwardly from the diffusion plate member, the diffusion plate support further having a second rim portion extending radially inwardly from the first rim portion above the diffusion plate member, the second rim portion having a plurality of recesses configured to receive corresponding hook portions of a tool to remove the diffusion plate support from the process chamber.

24. (Previously Presented) The apparatus of claim 17, further comprising:
the electrode support configured to support the electrode in the first position, the electrode support having a shield portion configured to be adjacent to a lower surface of the electrode, the electrode support further having brackets extending upwardly from the shield portion, the brackets having first interengaging parts; and
a diffusion plate support configured to support the diffusion plate member in the process chamber, and wherein the diffusion plate support has second interengaging parts configured to releasably engage the first interengaging parts upon relative rotation of at least one of the diffusion plate support and the electrode support relative to the other through an angle of less than 360 degrees.
25. (Previously Presented) The apparatus of claim 17, further comprising:
the electrode support configured to support the electrode in the first position, the electrode support having a shield portion configured to be adjacent to a lower surface of the electrode, the electrode support further having a plurality of brackets extending upwardly from the shield portion, with each bracket having a radially extending tab; and
a diffusion plate support configured to support the diffusion plate member in the process chamber, and wherein the diffusion plate support has a plurality of circumferentially extending channel portions, each channel portion having an axial opening configured to receive one of the tabs of the electrode support, each channel portion being configured to at least restrict relative axial motion of the diffusion plate support relative to the electrode support upon relative rotation of at least one of the diffusion plate support and the electrode support relative to the other through an angle of less than 360 degrees while the tabs are received in the channel portions.

26: (Currently Amended) ~~The~~ An apparatus of claim 17, further for processing a microelectronic workpiece, comprising:

a the process chamber configured to contain a process fluid, the process chamber having an electrode support configured to support an electrode at a first position within the process chamber, the process chamber further having a microelectronic workpiece support configured to support a microelectronic workpiece at a second position spaced apart from the first position; and

a diffusion plate member configured to be positioned between the first position and the second position, the diffusion plate member having a first surface facing toward the first position, a second surface facing toward the second position, and a plurality of openings extending through the diffusion plate member from the first surface to the second surface, the openings being arranged in at least one spiral pattern, wherein the apparatus is configured for relative rotational motion between the diffusion plate member and the microelectronic workpiece support.

27. (Currently Amended) ~~The apparatus of claim 17, further comprising the process chamber, and 26~~ wherein the process chamber includes a second vessel disposed inwardly from a first vessel, the second vessel having an upper edge defining a weir over which the process fluid flows into the first vessel, further wherein the electrode is disposed within the first vessel.

28. (Currently Amended) A process chamber for processing a microelectronic workpiece, comprising:

a first vessel;

a second vessel disposed inwardly from the first vessel and configured to hold a process fluid, the second vessel having an upper edge defining a weir over which the process fluid can flow into the first vessel;

an electrode support configured to support an electrode at a first position within the second vessel;

a microelectronic workpiece support positioned proximate to the second vessel to support a microelectronic workpiece at a second position spaced apart from the first position; and
a diffusion plate member positioned between the first position and the second position, the diffusion plate member having a first surface facing toward the first position, a second surface facing toward the second position, and a plurality of openings extending through the diffusion plate member from the first surface to the second surface, the openings being arranged in at least one spiral pattern, ~~at least one of the wherein the apparatus is configured for relative motion between the~~ diffusion plate member and the microelectronic workpiece support ~~being rotatable relative to the other.~~

29. (Previously Presented) The apparatus of claim 28 wherein the plurality of openings includes a plurality of elongated curved slots spaced apart from each other along a spiral path.

30. (Previously Presented) The apparatus of claim 28 wherein the openings are aligned along a single spiral path extending radially and circumferentially from a central portion of the diffusion plate member toward an outer portion of the diffusion plate member.

31. (Previously Presented) The apparatus of claim 28, further comprising a diffusion plate support configured to support the diffusion plate member in the cup, and wherein the diffusion plate support has a plurality of mounting locations, each configured to support the diffusion plate member at a different position between the first position and the second position.

32. (Previously Presented) The apparatus of claim 28 wherein the diffusion plate member has an edge surface between the first surface and the second surface, and wherein the apparatus further comprises a diffusion plate support configured to support the diffusion plate member in the second vessel, and wherein the diffusion plate

support has a plurality of grooves with each groove configured to support the diffusion plate member at a different position between the first position and the second position.

33. (Previously Presented) The apparatus of claim 28 wherein the diffusion plate member has generally circular first and second surfaces, and an edge surface between the first and second surfaces, the edge surface being rounded convexly outwardly away from the first and second surfaces, and wherein the apparatus further comprises a diffusion plate support configured to support the diffusion plate member in the second vessel, and further wherein the diffusion plate support has a plurality of grooves with each groove being rounded concavely to receive and support the diffusion plate member at a different position between the first position and the second position.

34. (Previously Presented) The apparatus of claim 28, further comprising a diffusion plate support configured to support the diffusion plate member in the second vessel, and wherein the diffusion plate support has a first rim portion extending upwardly from the diffusion plate member, the diffusion plate support further having a second rim portion extending radially inwardly from the first rim portion above the diffusion plate member, the second rim portion having a plurality of recesses configured to receive corresponding hook portions of a tool to remove the diffusion plate support from the process chamber.

35. (Previously Presented) The apparatus of claim 28 wherein the electrode support has a shield portion configured to be adjacent to a lower surface of the electrode, the electrode support further having brackets extending upwardly from the shield portion, the brackets having first interengaging parts, and wherein the apparatus further comprises a diffusion plate support configured to support the diffusion plate member in the second vessel, and wherein the diffusion plate support has second interengaging parts configured to releasably engage the first interengaging parts upon relative rotation of at least one of the diffusion plate support and the electrode support relative to the other through an angle of less than 360 degrees.

36: (Previously Presented) The apparatus of claim 28 wherein the electrode support has a shield portion configured to be adjacent to a lower surface of the electrode, the electrode support further having a plurality of brackets extending upwardly from the shield portion, with each bracket having a radially extending tab, and wherein the apparatus further comprises a diffusion plate support configured to support the diffusion plate member in the process chamber, and wherein the diffusion plate support has a plurality of circumferentially extending channel portions, each channel portion having an axial opening configured to receive one of the tabs of the electrode support, each channel portion being configured to at least restrict relative axial motion of the diffusion plate support relative to the electrode support upon relative rotation of at least one of the diffusion plate support and the electrode support relative to the other through an angle of less than 360 degrees while the tabs are received in the channel portions.

37-44. (Cancelled)